Efficacy of use of Continuous Glucose Monitoring System in patients with Congenital Hyperinsulinism

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INTRODUCTION

- In Congenital Hyperinsulinism (CHI), hypoglycaemic episodes, particularly the asymptomatic ones, are not always detected due to the intermittent measurement of blood glucose concentrations.
- Detecting and treating these episodes is important for prevention of hypoglycaemic brain injury.
- Continuous Glucose Monitoring System (CGMS) is widely used in adults and children with diabetes, however the use in patients with CHI remains limited.

AIM

To determine whether children with CHI can have an effective glycaemic control with the use of CGMS.

RESULTS

- Hypoglycaemia
  - 60% of the patients (6/10) had an improvement of the time in hypoglycaemia (between 0.1 and 1.7%), while 5 patients had an increase (between 1.1 and 2%), in the time in hypoglycaemia and 1 remained the same.
  - 50% of the participants (5/10) had a reduction of the time in very low hypoglycaemia (between 0.1 and 0.2%), with 3 patients showing increase (between 0.2 and 1.7%), and 2 remaining unchanged.

- Hyperglycaemia
  - In 50% of the patients (5/10) there was a decrease of time in hyperglycaemia (between 0.1 to 4.2%). In 4 patients an increase was noted (between 0.6 to 4.9%) whereas in 1 patient there was no change.
  - 20% of our cohort (2/10) showed a decline of the time in very high hyperglycaemia (0.1%), with 2 patients showing a rise (between 0.2 to 4.4%) and 6 remaining unchanged.

CONCLUSIONS

After 12 weeks of use of Dexcom G6 CGMS in patients with CHI at our centre, we noticed an improvement of TIRN and a decrease in number of weekly hypoglycaemic episodes. Therefore, CGMS can assist CHI patients and families with more effective glycaemic control. This way, we may avoid hypoglycaemic brain injury and optimize treatment. Further studies are needed to assess the potential of CGMS as a decision-making tool in hypoglycaemia management in the CHI cohort.

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Worse TIRN (more hypoglycaemias) outcomes observed were: patients with CHI showed an average change of 1.1% (-99.5 mmol/L), with 2 patients showing a decline (0.2% and 3% respectively) and 6 remaining unchanged.

REFERENCES


CONTACT INFORMATION